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Two new species of *Eladia* from soil

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Abstract — Two new species of *Eladia*, *E. inflata* and *E. minima* from soil in China, are described and illustrated. The type specimens (dried cultures) and living cultures are deposited in the Herbarium of Shandong Agricultural University: Plant Pathology (HSAUP).

Key words — anamorphic fungi, systematics

Introduction

Dale (1914: 52–53) described a fungus isolated from soil, which was tentatively regarded as a new species of *Penicillium* (as "*Penicillium* ? sp."). This collection was subsequently named as *P. sacculum* (Biourge 1923: 323; Dale 1926). Thom (1930: 538–539) made a provisional assignment of this species to *Scopulariopsis,* after studying the type material (subsequently lost). Hughes (1953: 614–615) showed that *Scopulariopsis* is not closely related to *Penicillium*, since the two genera have different methods of spore formation. *Penicillium* is enteroblastic-phialidic, while *Scopulariopsis* is holoblastic-percurrent (annellidic). Since the sporogenous cells of *P. sacculum* are phialides, Smith (1961) recombined the taxon as *Eladia saccula*, the type species of a new monotypic genus, following detailed examination of two additional collections. Matsushima (1971) described a second species, *E. striatispora*. Until now, only those two species have been reported.

During an investigation of soil fungi in Sichuan Province, two fungi were obtained from forest and mountain soil, respectively. Both match the morphological characteristics of *Eladia*, but do not resemble the other described species in this genus, and are therefore described as new species.

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Taxonomic descriptions

Eladia inflata Y.L. Jiang & T.Y. Zhang, **sp. nov.** FIGURE 1

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Coloniae effusae, brunneo-virescens, velutinae. Mycelium et superficiale et immersum, ex hyphis ramosis, septatis, hyalinis, laevibus, 1–5 µm crassis compositum. Phialophora erecta, hyalinis, simplicia vel irregulariter ramosa, septata, laevia, 9.5–65.5 µm longa, basi 2–3 µm crassa, apicem 2.5–5.5 µm crassa. Phialides hyalinae vel pallide brunneae, inflatae vel sphaericae, subsphaericae, pyriformiae, obpyriformiae, ellipsoideae, laeves, 5.5–10.5 × 2.5–7.5 µm. Conidia solitaria vel in brevicatenatis, globosa, medio-brunnea, asperula, 3–5.5 µm diametro, pro maxima parte 4 µm diametro.

Holotype: from a forest soil of Kangding County, Sichuan Province, China. Jun. 25. 2006, Y. L. Jiang, HSAUPII$_{06}$9026 (= HMAS 196210), dried culture (**holotype**), and ex-type living culture.

Etymology: in reference to the inflated phialides

Colonies effuse, brownish green, velvety. Mycelium superficial and immersed: hyphae branched, septate, hyaline, smooth, 1–5 µm thick. Phialophores erect, hyaline, simple or irregularly branched, septate, smooth, 9.5–65.5 µm long, the base 2–3 µm thick, the apex 2.5–5.5 µm thick. Phialides hyaline to pale brown, often inflating to spherical, subspherical, pyriform, obpyriform or ellipsoidal, smooth, 5.5–10.5 × 2.5–7.5 µm. Conidia solitary or forming short chains, globose, medium brown, densely spiny, 3–5.5 (commonly 4) µm diam.

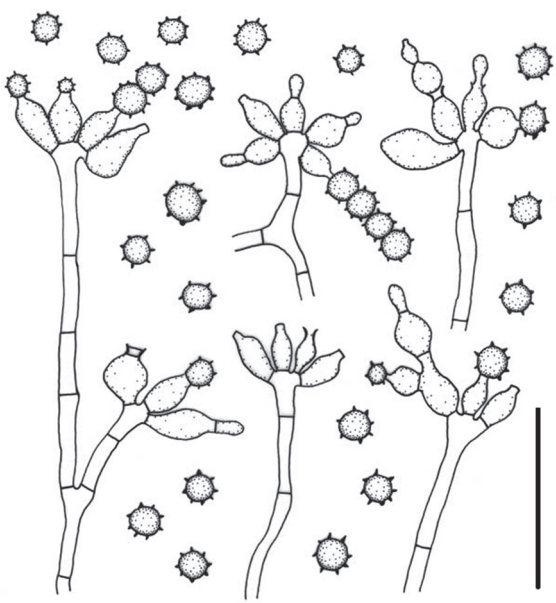

Fig. 1 Conidia and conidiophores of *Eladia inflata* (Bar=25 µm).

This new taxon differs from other described species in this genus in its larger and inflated phialides.

Eladia minima Y.L. Jiang & T.Y. Zhang, **sp. nov.** FIGURE 2

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Coloniae effusae, griseae vel atrae, velutinae. Mycelium superficiale et immersum, ex hyphis ramosis, septatis, hyalinis, laevibus, 1–3 µm crassis compositum. Phialophora erecta, hyalina, simplicia, septata, laevia, 9.5–15.5 × 1–2.5 µm. Phialides hyalinae, ovoideae vel ellipsoideae, 3–6 × 2–2.5 µm. Conidia solitaria vel in brevicatenatis, globosa, medio-brunnea, asperula, 2.5–5 µm diametro, pro maxima parte 3.5 µm diametro.

Holotype: from a mountain soil of Yajiang County, Sichuan Province, China. Jun. 26. 2006, Y. L. Jiang, $HSAUPII_{06}9001$ (= HMAS 196211), dried culture (**holotype**), and ex-type living culture.

Etymology: in reference to the small conidia

Colonies effuse, grey to black, velvety. Mycelium superficial and immersed: hyphae branched, septate, hyaline, smooth, 1–3 µm thick. Phialophores erect, hyaline, simple, septate, smooth, 9.5–15.5 × 1–2.5 µm. Phialides hyaline, ovate or ellipsoidal, 3–6 × 2–2.5 µm. Conidia solitary or forming short chains, globose, medium brown, densely spiny, 2.5–5 (commonly 3.5) µm diam.

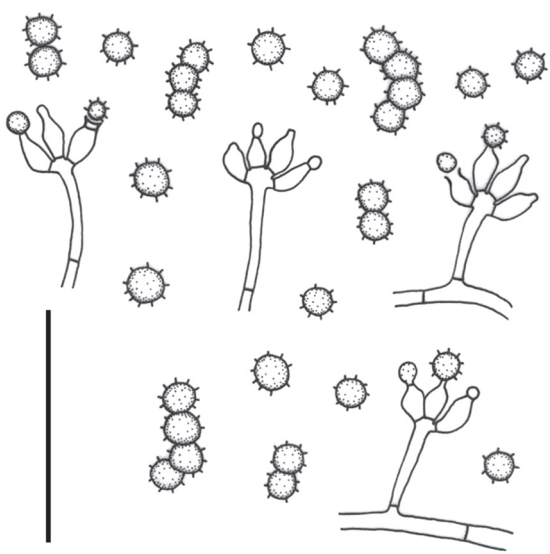

Fig. 2 Conidia and conidiophores of *Eladia minima* (Bar=25 µm).

E. minima resembles *E. saccula* (Smith 1961), but the latter having bigger conidia (5–6 µm diam.) and phialides (5.5–6 × 3–3.5 µm). The following key shows how the four species of *Eladia* differ.

Key to the species of *Eladia* G. Sm.

1. Phialospores with 6–9 longitudinal striations ..... *E. striatispora*
   Phialospores without longitudinal striations 2
2. Phialides often quite inflated to spherical, subspherical, or obpyriform..... *E. inflata*
   Phialides often ovoid or ellipsoidal, rarely spherical, subspherical, or obpyriform ... 3
3. Phialospores 2.5–5 (commonly 3.5) µm diam, phialides 3–6 × 2–2.5 µm .. *E. minima*
   Phialospores 5–6 µm diam, phialides 5.5–6 × 3–3.5 µm ..... *E. saccula*

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